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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,555	11/19/2003	Scott Patrick Campbell	M4065.0812/P812-A	5068

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EXAMINER	
SELBY, GEVELL V	
ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,555	CAMPBELL, SCOTT PATRICK	
	Examiner	Art Unit	
	Gevell Selby	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26,27 and 32-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26,27 and 32-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 27, 32, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Bauer et al., US 6,130,448.

In regard to claim 27, Bauer et al., US 6,130,448, discloses an active pixel sensor system having an active pixel array, the system comprising:

a lensing element (see figure 3, element 54, lens or lenses) configured to receive optical data and change an imaging characteristic, said lensing element providing cover for the active pixel array (see column 6, lines 43-51).

In regard to claim 32, Bauer et al., US 6,130,448, discloses an assembly for an image sensor device, comprising:

an image sensor array (see figure 1, element 26); and

a cover plate (see figure 3, element 54) operatively disposed over said image sensor array, said cover plate including an integrated lensing structure which is developed to change imaging characteristics of incoming radiation which impinge towards said image sensor array (see column 6,lines 43-51).

In regard to claim 44, Bauer et al., US 6,130,448, discloses a method for controlling Petzval field curvature in a camera system, comprising:

contouring a cover plate to form a lensing structure (see column 6, lines 43-51); and

covering an imaging array with said cover plate, said cover plate being located adjacent said imaging array in an optical path of said camera system (see figure 3), whereby it is inherent the contoured plate of the Bauer reference controls the Petzval field curvature, since that is an effect of curving the plate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 26, 41 43, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756.

In regard to claims 26 and 46, Bauer et al., US 6,130,448, discloses an image sensor camera system and method for converting optical data into digital image data, the system comprising:

an image sensor array (see figure 1, element 22) having a plurality of sensors, said sensors operating to receive the optical data and integrate the data

into electrical charge proportional to the amount of optical data collected with a particular period of time (see column 4, line 59-61);

a lens system (see figure 3, element 54) operatively coupled to the image sensor array and configured to carry and focus the optical data onto the image sensor array, said lens system including a plurality of lenses and a cover plate, said cover plate contoured into a lensing structure that changes an imaging characteristic (see column 6, lines 43-51).

The Bauer reference does not disclose comprising sensor electronics coupled to the image sensor array, and configured to receive the electrical charge, the sensor electronics operating to convert the electrical charge received by the plurality of sensors into the digital image data. However, it is well known in the art have an image sensor coupled to sensor electronics.

Iura et al., 5,847,756, discloses an image sensor camera system with a lens system101 an imager 103, and sensor electronics including an amplifier 104m an A/D converter 105 and a video signal processor 106 that produces digital still images (see column 7, line 57 to column 8, line 20).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, to have comprising sensor electronics coupled to the image sensor array, and configured to receive the electrical charge, the sensor electronics operating to convert the electrical charge received by the plurality of sensors into the digital image data, in order view the images on a display or to save to be viewed or processed at a later time.

In regard to claim 41, Bauer et al., US 6,130,448, discloses an image sensor device, comprising:

an image sensor (see figure 1, element 22); and

a cover part (see figure 3, element 54) which covers the integrated circuit image sensor, wherein said cover part includes a lensing element formed therein (see column 6, lines 43-51).

The Bauer reference does not disclose an image sensor electronics connected to the image sensor.

Iura et al., 5,847,756, discloses an image sensor camera system with a lens system101 an imager 103, and sensor electronics including an amplifier 104m an A/D converter 105 and a video signal processor 106 that produces digital still images (see column 7, line 57 to column 8, line 20).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, to have comprising sensor electronics coupled to the image sensor array, and configured to receive the electrical charge, the sensor electronics operating to convert the electrical charge received by the plurality of sensors into the digital image data, in order view the images on a display or to save to be viewed or processed at a later time.

In regard to claim 43, Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, discloses the image sensor device as in claim 41. The Bauer reference discloses wherein said image sensor includes an active pixel array (see column 4, line 59-61).

5. Claims 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al., US 6,130,448, in view of Takachi, US 2003/0137595.

In regard to claim 33, Bauer et al., US 6,130,448, discloses the assembly as in claim 32. The Bauer reference does not disclose wherein said cover plate includes a mounting structure developed to hold an assembly including additional lensing structures.

Takachi, US 2003/0137595, discloses an imaging assembly with a cover plate (see figure 2, element 5), wherein said cover plate includes a mounting structure (see figure 2, element 8b) developed to hold an assembly including additional lensing structures (see para. 29) that attaches to the image sensor by clamps (see figure 2).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify over Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, wherein said cover plate includes a mounting structure developed to hold an assembly including additional lensing structures, in order to facilitate the adjustment of the focal length while reducing the number of parts.

In regard to claim 34, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 33. The Takachi reference discloses wherein said additional lensing structures include a multiple piece lensing structure (see figure 2, elements 10-13) which collectively with said integrated lensing structure collects and focuses radiation onto said image sensor array (see para 29).

In regard to claim 35, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 34, wherein said multiple piece lensing structure includes three lens parts (see Bauer: figure 3, element 54 and Takachi: figure 2, elements10 and 13).

In regard to claim 36, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 35, wherein said multiple lens system includes a convex lens (see Bauer: figure 3, element 54), a first piano-convex lens (see Takachi: figure 2, element 10), and a second piano-convex lens (see Takachi: figure 2, element 13).

In regard to claims 37 and 38, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 33. The Bauer reference does not disclose wherein the mounting structure includes screw threads or a threaded ring. However, it is well know in the known to have screw threads and a threaded ring in the lens structure to hold the lenses in place.

Takachi discloses a lens structure with screw threads (see figure 3, element 7) and a threaded ring (see figure 3, element 9) as the prior art.

It would have been an obvious design decision for one of ordinary skill in the art to modify Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, wherein the mounting structure includes screw threads or a threaded ring. However, it is well know in the known to have screw threads and a threaded ring in the lens structure to hold the lenses in place, in order to hold the lenses in place to properly focus on the object being photographed.

In regard to claim 39, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 32. The Bauer reference discloses wherein said integrated lensing structure forms a concave lens part (see figure 3, element 54).

In regard to claim 40, Bauer et al., US 6,130,448, in view of Takachi, US 2003/013759, discloses the assembly as in claim 32. The Takachi reference discloses wherein said integrated lensing structure forms a convex lens part (see figure 2, element 10, bottom part of the lens is concave).

6. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, as applied to claim 41 above, and further in view of Maruyama, US 6,597,401.

In regard to claim 42, Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, discloses the image sensor device as in claim 41. The Bauer and Iura references do not disclose wherein said lensing element includes at least one of a refractive lensing element and a diffractive lensing element.

Maruyama, US 6,597,401, discloses an imaging optical system wherein said lensing element includes at least one of a refractive lensing element and a diffractive lensing element (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, and further in view of Maruyama, US 6,597,401, wherein said lensing element includes at least one of a refractive lensing element and a diffractive lensing

element, in order to make the optical system compact and limit the light received to a desired wavelength.

7. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al., US 6,130,448, in view of Rostoker, US 5,977,535.

In regard to claim 45, Bauer et al., US 6,130,448, discloses the method as in claim 44. The Bauer reference does not disclose wherein contouring the cover plate to form the lensing structure includes forming at least one of a refractive lens and a diffractive lens.

Rostoker, US 5,977,535, teaches using both refractive and diffractive lenses in an imaging optical system (see column 12, lines 21-26)

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Bauer et al., US 6,130,448, in view of Rostoker, US 5,977,535, wherein contouring the cover plate to form the lensing structure includes forming at least one of a refractive lens and a diffractive lens, in order to vary the focal length.

8. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al., US 6,130,448, in view of Iura et al., 5,847,756, as applied to claim 46 above, and further in view of Rostoker, US 5,977,535.

In regard to claim 47, Bauer et al., US 6,130,448, discloses the method as in claim 46. The Bauer reference does not disclose wherein contouring the cover plate to form the lensing structure includes forming at least one of a refractive lens and a diffractive lens.

Rostoker, US 5,977,535, teaches using both refractive and diffractive lenses in an imaging optical system (see column 12, lines 21-26)

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Bauer et al., US 6,130,448, in view of Rostoker, US 5,977,535, wherein contouring the cover plate to form the lensing structure includes forming at least one of a refractive lens and a diffractive lens, in order to vary the focal length.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gevell Selby, Art Unit 2622
gvs